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TREMBLING MOUNTAIN,

LAURENTIDES, (CANADA),
(3,000 FEET.)

A HIGH-LEVEL SANITARIUM

FOR THE TREATMENT OF

TUBERCULOSIS.

CURES OPERATED WINTER AND SUMMER

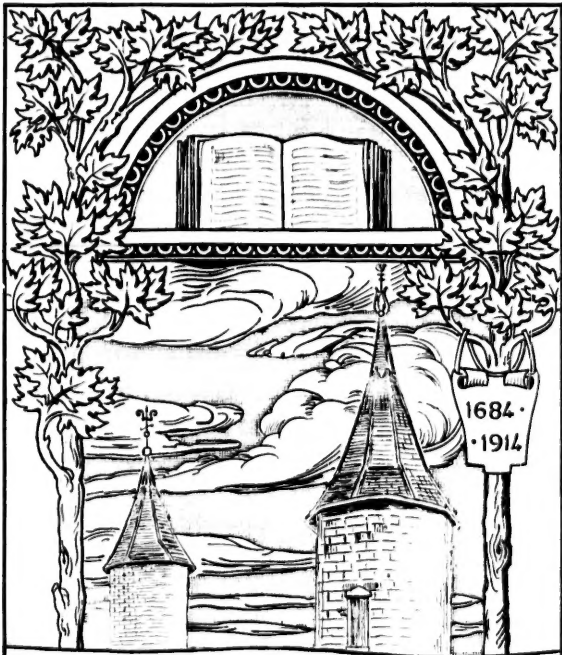
BY

DOCTOR CAMILLE LAVIOLETTE,

Doctor in medicine of Laval University, ex-Physician of the Notre
Dame Hospital of Montreal, Specialist at the Deaf and Dumb
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and Laryngology of Paris, ex-pupil of the Paris,
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With compliments of the author.

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Some of the grandest discoveries ever made in the field of medical science, have been effected in the present day. One of the most important is the discovery demonstrating the contagious character of certain diseases—of pulmonary phthisis, for instance, and the mode of treatment necessary for its cure.

It had long been established that one-seventh of the deaths that took place throughout the world, were caused by tuberculosis, the ravages of which were growing worse and worse, whilst no adequate remedy was as yet known to stay its progress. But thanks to the genius of Robert Koch, the true nature of this fell malady has been laid bare, and the best means of crushing it, have been satisfactorily explained. Now

that it is proved to be a contagious disease, its prevention and cure, are possible of accomplishment.

The existence of tuberculosis is universal ; it is no respecter of man or brute. It preys alike on all the organs and tissues of the body, but most frequently attacks the lungs—hence, it is commonly termed pulmonary phthisis.

There seems, however, to be an impression abroad, that tuberculosis is not contagious, owing to the opposition to such a doctrine of certain practitioners, and that its germs, so far as propagation is concerned, only exist in the diseased imagination of bacteriologists.

Such an impression is both erroneous and mischievous.

By means of carefully conducted experiments, all physicians of any note, are now conversant with the origin of consumption and its mode of propagation. It is proved that the bacilli of the disease are always present in the affected parts of men and animals suffering from tuberculosis.

This germ can be readily distinguished, by its morphological characteristics and its reaction to staining fluids, from all other micro-organisms ; it is never present in any disease except tuberculosis ; it has been grown or cultivated in proper substances outside the living body for long periods of time ; and when the growths or cultures suspended in distilled water are used for the inoculation of susceptible animals, the same disease, tuberculosis, is produced, with the same changes in the tissues ; and in these diseased tissues the same germ is present with the same morphological appearances, and the same staining reactions. Finally,

it has been shown that no other kind of living or dead thing can or does produce this disease, when used for such inoculations.

When the bacilli attack the human organs, they produce small growths and these growths are what are known as tubercles. It is the matter contained in these tumors which the consumptive coughs up and expectorates; hence, millions of bacilli can be expectorated in a single day.

These germs thus scattered over the soil are not reproduced, nevertheless they preserve their vitality and virulence during a considerable time. In this condition they assume a finely pulverized form which constitutes the principal element of danger. They become intimately mixed with particles of dust and are consequently thrown into the atmosphere by sweeping and dusting, by the beating of carpets and the cleaning of clothes which were infected by them. The germs floating in the air penetrate into the respiratory tracts and are brought in contact with the mucous coverings of the air passages; they fall on articles which are used as food and may be thus brought into the organism. We may easily conclude that the health of those persons who live in an atmosphere vitiated by the bacilli of phthisis is greatly endangered.

Thus the air in rooms which have been occupied by consumptive persons becomes infected and capable of producing the disease when inspired by healthy individuals. It has been shown experimentally that the dust removed from the walls, mouldings, and pictures in rooms of private houses, and in hospital wards

and hotel bedrooms, which have been occupied by consumptive patients, is capable of producing the disease, when used for the inoculation of susceptible animals. It has also been established that this disease is spread by the flesh and milk of tubercular animals.

On the other hand, there is a general belief that phthisis is hereditary; but this belief is unsupported by medical science; there is nothing to show in most cases that it is transmitted by the consumptive to his offspring. It is only after the lapse of months—or years sometimes, that the disease declares itself in members of families where it was considered hereditary.

The founders of the new school of science are willing to admit that there are many cases on record tending to prove the influence of heredity; but their interpretation of such cases differs from that generally accepted heretofore. Consumptive parents do not, in the majority of cases, transmit the disease to their children; they endow them with a constitution or rather a predisposition to contract consumption, if the germs should be absorbed by their children in sufficient quantity. Nevertheless the father or mother affected with tuberculosis is a focus for the propagation of the disease to their children. The children then are really in the most favorable condition for the acquisition of this affection. They become tuberculous, not on account of an hereditary taint but we may say by immediate inoculation.

For if the consumptive parents do not convey these germs or microbes in their blood, they unfortunately carry them around. Thus, their children are hourly

exposed to the disease, and die—not of hereditary tuberculosis, but of contagion. How much more consoling is this view of heredity than that previously entertained—how much more conducive to beget confidence in the science and possibilities of medicine!

With our knowledge that the child of a consumptive, though not actually born with the parental ailment may fall a prey to it later on, it is our duty to save the creature from the threatened danger, by having recourse to the law of hygiene and the adoption of a proper course of medical treatment.

The child, therefore, should be isolated from the home of its parents and conveyed where it may breathe a purer and more salubrious atmosphere. In this way will the disease be confined within narrower bounds, and its contagious tendencies crippled.

In an interesting paper read in 1891, at a meeting of the Congress assembled for the discussion of tuberculosis, Dr. Hutinel showed the absolute necessity of isolation and pure air in the case of children predisposed to consumption from heredity.

It is also shown, from a careful investigation of the facts, made by M. Peyron, director of *L'Assistance Publique de Paris*, that out of 18,000 Parisian children which the institution lodged and cared for in the country—of whom a very large percentage were born of parents who succumbed to consumption in the hospital—but a very small number inherited the parental disease.

If such good results have been possible in the case of children condemned, as in France, amongst peasants, to much wretchedness and poverty, what desir-

able amelioration in the condition of our Canadian youths may not be accomplished by isolating those amongst them liable to become consumptives in a high mountain sanitarium?

The fact that several members of the same family may be affected by tuberculosis is attributable—not to heredity, but to transmission.

Where the parents suffer from tuberculosis, the children, from the earliest moments of life, are exposed to the disease under the most favorable conditions for its transmission; for not only is the dust of the house likely to contain the bacilli, but also the relations between parents and children—especially between mother and child—are of that close and intimate nature especially favorable for transmission by direct contact. Thus, sometimes, the child will take its death from the lips of his parents.

But, for the bacilli to be contagious, the conditions must be favorable—the constitution must be feeble and sickly. The more the constitution is undermined by defective hygiene, insufficient nourishment, unhealthy surroundings, from hereditary causes, inflammation of a broncho-pulmonary nature, etc., the more favorable will it be found for the pernicious operations of the bacilli. But, as stated before, all the conditions here mentioned merely favor the reception of tuberculosis; no one of them, nor the whole of them together, could generate tuberculosis without, the active presence of its germs.

It may here be remarked that consumption is more prevalent amongst people of sedentary habits, than amongst those engaged in outdoor pursuits. The

following statistics prove this contention : Out of 1000 who died from all causes, it was found that, of the number who died of pulmonary phthisis, 103 were farm laborers, 108 fishermen, 121 gardeners, 122 farmers, 167 grocers ; whilst the mortality amongst tailors was 290, and amongst drapers 301. The death rate for printers was 411 out of a thousand, or close on 50 per cent. This havoc of human life is even worse in the mines of Cornwall, where the miners fall victims to this grim malady at the rate of 600 per thousand. Those whose occupation compels them to work in confined, dusty quarters, show the highest mortality. The vitiated atmosphere tends to breed bronchial and pulmonary affections, thus paving the way for the inroads of consumption. To live in close company with a person who has the disease, is to court the infection. The stuffy atmosphere of mills and manufactories of all kinds, is fatal to the lungs. Arthaud found 32 out of 38 workmen, employed in an electric factory in Paris, affected by tuberculosis, the disease having been propagated by four of their number, the only ones in the factory originally infected by it.

There are many instances where sick people were brought to hospitals without the least symptom of lung trouble, and left perfectly cured of the particular malady, for which they sought treatment, but subsequently returned and died in these hospitals from consumption contracted on their first visit from contact with tuberculous patients. To be able to check this malady a full knowledge of its destructiveness is necessary ; *then*, no efforts will be spared to stamp it out.

From a sanitary as well as economic point of view, all other contagious diseases are relatively unimportant. If Montreal only suffered one day from Asiatic cholera as it habitually does from phthisis, people would fly from it as from a pestilence.

As previously mentioned, one-seventh of the deaths that occur throughout the world are caused by tuberculosis. Take France as an instance—the accuracy of whose statistics is admitted. There we see that small-pox annually claims 10,000 victims, measles 15,000, scarlatina 6,000, diphtheria 8,000, typhoid fever 15,000—a total of 64,000; whereas tuberculosis alone claims 160,000 victims every year. These figures show that the latter disease is far more deadly than all the other infectious diseases combined.

In the City of Montreal, the statistics compiled by Dr. L. Laberge, the city physician, show that out of 1281 deaths which occurred in 1893, 565 were caused by pulmonary consumption. They show also that for 362 consumptives who died in 1875, 565 died in 1893. Thus consumption has been gaining steadily since 1875.

From statistics compiled by the Federal Government (Ottawa) it is seen that out of 67,188 deaths for 1891, 7,490 were due to consumption, and we are justified in surmising that as many more died of tuberculosis scattered through other parts of the human system. All of which goes to prove that we are literally devoured by this disease, and that the establishment of a sanitarium, not only for its prevention but for its proper treatment and cure, is an absolute necessity. I say for its *cure*, because all

modern authorities are agreed that phthisis can be cured, an opinion further borne out by the facts I am about to cite.

Out of 100 autopsies performed in New York on persons whose deaths were sudden or accidental, 30 of the deceased disclosed unmistakeable proofs that they had suffered from consumption and been cured. In the morgue in Paris, 20 out of 100 were shown by post-mortem examinations to have been cured of the same malady. Dr. P. E. Mount declares that during his 15 years' professional experience in autopsies held in our city morgue, where the deaths were sudden or accidental, he found evidences, in more than one case, of phthisis having been cured.

There is little room for doubt, therefore, that this disease is curable. But, what is the most efficacious treatment in the premises? The hygienic, beyond all doubt.

It is not necessary to give all the historic details connected with hygienic treatment. Suffice it to say that there is nothing new under the sun, a remark especially true of climatic treatment of phthisis—a treatment as old as medicine itself. It was favored by Hippocrates in pagan times. Celsus and Aretæus believed in its efficacy, since both strongly recommended consumptives to try the benefits of sea voyages and country air, if they could possibly bear the fatigue of travel. Pliny the Elder, had great confidence in sun-baths and was, besides, the first to find healing virtues in the odor of balsam and pine trees. Galien sent his consumptive patients amongst the mountains and recommended the "milk cure." His favorite moun-

tain was Mount Angri, near Naples, owing to its great height and the dryness of the atmosphere. Galien's example was followed all through the middle ages, and was observed by the doctors of Arabia. Amongst other practitioners of the latter country, Avicenna used to send his patients to Crete for ulcerated lungs and catarrh. Paracelsus and Van Helmont did the same thing, the latter going the length of prescribing wine for the worst cases of fever. It is also worthy of note that Thomas Willis, writing in 1650, records that the English migrated in large numbers to the south of France, where they spent the winter months. Towards the close of the 17th century, Baglivi wrote a well-reasoned, descriptive article, elucidating the advantages and influences of climatic treatment, and bitterly complaining of the powerlessness of medicine to reach certain maladies. Fred Hoffman and Thomas have written in the same strain as Baglivi. Fallopius advises the necessity of suiting the climate to the constitution, while Böerhave, Van Swieten and Gilchrist insist on the value to health of high latitudes. Laennec had implicit faith in the curative properties of sea air. Hufeland, and later, Schoenlin, had every trust in *mountain air*. The freedom from sickness enjoyed by mountaineers, living at fixed heights above the sea level—a freedom fully proved and vaunted by Fuchs, Schudi, Muhry and others—soon attracted the attention of men of science. Subsequently, Brehmer made the collected wisdom of the latter the basis of a new system of treatment. In fact, it is to him that the world owes the rational therapeutics known and prized to-day. His method attaches much importance

to the action of the heart and to the strengthening of the upper part of the lungs—in this he is still in touch with the most modern ideas of eminent practitioners. Herman Weber, Niemeyer, Rhodin, the doctors of Davos, and the majority of experts on phthisic subjects, taking Brehmer's method as a starting-point, have further developed and perfected our therapeutics.

Therapeutics means hygiene—in other words, a method of treatment based on the strict application of hygienic laws to all the actions of daily life.

It depends on a special conception of phthisis, according to which the organism of man has a struggle to maintain and where the rôle of the physician is to bring help to all the weak points that are attacked.

This method, which owed its origin to empiricism, was consecrated to the service of legitimate science on the discovery of the bacillus; from the moment that the latter was first encountered in the human system a fierce struggle has been going on between them; it remains to be seen which will come off victorious.

It has been frequently stated that the discoveries of modern bacteriology have been without practical value, and that we are no better prepared to-day for the treatment and cure of infectious diseases than before the days of bacteriology. This is far from being so. Those discoveries have given precision to our knowledge of the causes of infectious diseases and their modes of dissemination, and so have made possible the employment of intelligent and efficient means for their prevention and their treatment. This is particularly true of tuberculosis. The knowledge we

now have of the causation of tuberculosis, makes possible the formulation of perfectly efficient means for its prevention and treatment.

Although phthisis is infectious, its germ does not affect all persons indiscriminately ; it is necessary that the soil should be prepared by hereditary predisposition ; by debilitating diseases, etc.

Tuberculosis is the result of the combination of two elements as factors : (1) of the microbe, a mere particle or atom present in the body ; and (2) an organism prepared to receive the germ and to offer a favorable ground for its fructification—in a word a predisposed organism.

This predisposition is of two kinds ; *innate* predisposition, as in children born of consumptive parents ; and *acquired* predisposition, common to old and young, resulting from lowered vitality. The latter undesirable condition of the body, may arise from ordinary sickness ; chronic neglect of the laws laid down by hygiene ; or from abuses of any kind, physical or moral.

The healthiest people, and those free from any hereditary antecedents may become tuberculous if they allow a progressive alteration of the strength and quality of their organs ; thus by the abuse and waste of their strength, their resistance to disease is diminished. They lose their means of defence. If they have occasion to come in contact with the microbe of consumption, and in Canada the occasions are not infrequent, they become consumptive. This is of daily occurrence. In short sons of phthisical parents are born predisposed to the disease, but those who

constitute the larger number of consumptive cases become phthisical through their own neglect.

Let us recall the evolution of any ordinary case of consumption. In it the local affection is soon followed by constitutional symptoms. The changes in the lungs lead to an alteration in the quality of the blood. The latter is increased by the fever and attains its maximum during the elimination of the diseased tissues. The fever and the alteration of the blood cause changes in the system; a diminution in the secretion of the gastric juice; hence a disturbance in the assimilation. To consumption is added inanition; the muscular system is changed, the patient loses all inclination for exercise; the heart suffers and its state is reflected on the condition of the blood and on the state of the lungs which permits the disease to advance.

The excretions and eliminations are badly discharged; the nervous system and all the important organs of the body are impaired by progressive degeneration. It is easily conceived that under such condition of the organs, scarcely any remedies are likely to influence a constitution so profoundly transformed. It is to hygiene that recourse must be had. The hygienic treatment is of service in all chronic diseases but especially in phthisis; in the latter it gives frequently such striking results, is so rational and in such obvious conformity with the pathogeny of the disease, that it is a duty to aid in promoting its general adoption. First of all, it must be admitted that phthisis is a curable disease. According to Herard and Cornil phthisis may be cured in all its stages. Still it re-

mains to be seen what treatment yields the most favorable results.

The treatment of tuberculosis has undergone radical changes within the second half of the present century. Up to 1860, the prevailing practice was to send consumptives to southern climates; where warmth, with shelter from the winds, was considered the one thing necessary. The atmosphere required to be dry or moist, as best suited the peculiar nature of the malady.

Tuberculosis was treated in the same manner as bronchitis, inflammation, in either case, being most dreaded. Between 1860 and 1870, the efforts of pathologists threw a new light on the study of its microbe, the latter thenceforward monopolizing the attention of the most eminent scientists. To kill this microbe, rather than the disease it engendered, was the first wish and aim of the medical world. To fortify the human system against its attacks, became imperative. The treatment of consumption, too, was to vary, to suit the progress of its different stages.

At the same time medical geography was progressing and becoming a science. It shook the faith in the effects of the sun in the south, by showing that pulmonary consumption is almost as frequent in the large towns of the south as in the capitals of the north. The same medical geography taught us that there exist zones exempt from tuberculosis, such as the high tablelands of Mexico, those of the Andes, certain parts of Switzerland, of Silesia, Iceland and Canada. These privileged places, where phthisis only appears in the case of a small number of individuals, living under especially bad hygienic conditions, have

a temperature of a rather low average, so that the air is always tonic and stimulating, and maintains the lungs in a state of activity, sufficient to enable them to resist at all times the development of the tubercle.

And yet these privileged localities where phthisis finds fewest victims, are not very high. In Switzerland an altitude of from 3,500 to 4,500 feet above the level of the sea is sufficient, in Styria 2,200, in Silesia 1,800, in Mexico 6,000, in Canada 1,800. It naturally follows that, since the inhabitants of these favored countries are free from phthisis, consumptives should be sent there in preference, their chances of recovery being so much greater.

The first trial of a northern latitude for the treatment of pulmonary disease, was made at Goetersdorf, in Silesia (1,900 feet above the level of the sea). Here Dr. Brehmer, in 1861, founded an institution where the course of treatment followed consisted of ventilation, cold baths, rubbing, nutritious food, etc.

In 1865, a well-known English doctor and a friend, both suffering from tuberculosis, passed the winter at Davos, Switzerland, with the result that both were cured. The news spread all over the world, causing much excitement and controversy in all ranks of the medical fraternity.

The following year Dr. Spengler opened a sanitarium at Davos for consumptives. Dr. Dettweiler, a pupil of Brehmer, opened another at Falkenstein, which is in charge of Dr. Dettweiler and Dr. Meissen, who have made the study and treatment of phthisis a specialty. I have had the advantage of visiting this famous institution, and intend to conduct the

one I am going to erect in Canada on the same principles.

The Falkenstein Sanitarium is situated on the Taunus Mountain, within an hour's journey from Frankfort-on-the-Mein, at an elevation of 1,200 feet, in the neighborhood of forests where flourish magnificent trees—beech, chestnut and oak. The building is constructed in the shape of a horse-shoe, and faces the south; from the grounds in front, the view is fine and expansive. An awning runs the entire length where the inmates habitually lounge about. Most of the rooms open into galleries which are free to all.

The ground flat is occupied by other rooms, where those requiring to be rubbed down, when sweating comes on, are attended to. There is also a water-cure department. The dining room is capacious and thoroughly ventilated.

Since diet plays an important part in the treatment of Falkenstein, the *cuisine* is, so to speak, the *materia medica* of the establishment. A dairy house is annexed to the sanitarium, milk being extensively used in treatment.

As the terrace belonging to the Sanitarium might not accommodate the numbers using it, round wooden pavilions have been erected in the garden opened to the extent of one-third of their circumference. Here are long, easy chairs for the patients, who frequent this part of the premises very much, free either to promenade, or quietly seat themselves at will. Here, too, they spend as much as 7 or 8 hours every day, in rain or shine, mist or wind, snow or frost, sometimes with a temperature as low as 12° below zero.

I have stated that dieting is one essential feature of the treatment followed in the Falkenstein Sanitarium; it is intimately associated with open air treatment. While the latter affects only on the quality of the blood, the former supplies the materials necessary for its regeneration.

A curious fact related to me by Dr. Dettweiler, is that the longer the denutrition of the tissues has lasted, and the more rapid it has been, the less is the appetite for food.

It is then necessary that the physician should employ all the resources of his imagination, and the patient should use the best of good will. There is no absolute rule, theory lends little assistance, the caprices of taste must be permitted; the physician must proceed carefully in his treatment.

Dettweiler recommends frequent meals but small portions, food rich in fats and hydrocarbons, vegetables, well prepared and varied, the yolk of eggs and beefsteaks being judiciously combined.

Use is also made of alcohol, but prudently and with a sparing hand. Fever, the dreaded enemy of consumptives, against which we are but indifferently armed, is kept at bay by quiet and repose and plenty of pure fresh air, aided by such antipyretic medicines as antipyrine, antifibrine, and thalline. Dr. Dettweiler strongly recommends these medicines, for the reason that he has already prescribed as much as 17,500 grams with marked success. Up-hill walks practised by the patients, for the benefit of the respiratory organs is another feature of the treatment at Falkenstein. "It is to this treatment," says Dr.

Dettweiler, "the basis of which is pure mountain air, "that we rightly attribute the remarkable results "which Dr. Meissen and myself have found by the statistics we compiled. He finds that the number of "absolute cures is 25 per cent. I figure them at 27 "per cent.; and these cures are effected in winter "and in summer, in about equal proportions!

Herman Weber states that 40 per cent. of the consumptive patients, who underwent pure, mountain air treatment, were cured, and an equal number benefited. Theodore Williams calculates that of 141 patients subjected to the same method, 41 were radically cured, and 23 noticeably improved in health.

These eminent men of science, have made it clear that pure mountain air restores the body's vitality. Under its influence activity comes back as well as a greater aptitude for work; the appetite improves; There is no more question of dyspepsia, of gastric disturbances, no more need of tonics or of stimulants, to make the food more tolerated; patients increase in weight; they can live out of doors and—thanks to the dryness and stillness of the atmosphere—can remain sitting out of doors in a temperature that they could not support in the lowlands, even when taking exercise.

Dr. Mermod says: "The atmosphere is so pure in the mountains that the colds of the lowlands are unknown. There are indeed some colds in the autumn or spring when the snow melts, but these colds are different from ordinary colds; they do not go through their full development but seem to miscarry. One might think that the air is too dry to allow the

production of mucus, or that the microbe, essential to certain catarrhal colds, is wanting.”

These authors also admit that consumptives living in these high latitudes rarely suffer from pulmonary hæmorrhage; those who had suffered from it in the lowlands ceased having it as soon as they are on the heights. It is a well established fact, which is explained by the rarity and dryness of the atmosphere which sends the blood to the extremities of the body, thus bringing about a congestion of the blood vessels of the skin and lessening, on the contrary, that of the lungs and of the other viscera. This suppression of hæmoptysis is of great importance. but they say the mountain air does still more—it hastens the cicatrisation of the indurated or infiltrated parts of the lungs, which is explained by the fact that in higher regions the activity of the lungs is carried to its highest pitch; the vesicles are more distended and those that are slow in working resume their functions.

Mountain air being less rich in oxygen than that of the lowlands, and the system being nevertheless obliged to furnish more heat, the thoracic muscles are obliged to make a greater effort, and this obligatory and unconscious exertion of the lungs makes up advantageously for the effects of aerotherapy by means of the air-tight chambers or portative apparatus, and cures in the same way pulmonary affections. The conscientious observations taken during late years by physiologists, prove that on mountain heights the number of inspirations is increased, and respiration becomes fuller and deeper.

The recent works of Paul Bert, of Viault, and of Regnard have shown that mountain life not only increases the capacity of the thorax, but acts directly on the composition of the blood, in two ways, either by increasing the *number of red corpuscles*—as Dr. Viault has observed in the case of three persons in whose blood he found five millions red corpuscles whilst they lived at the seaside, and eight millions, seven millions and nine millions after fifteen days spent at 12,090 feet above the sea level—or *by enabling the hæmoglobine to absorb a greater quantity of oxygen*, as Paul Bert has shown by experiment.

The blood of the lamas of Paz (12,000 feet high) absorbs 18 per cent. to 20 per cent. of its weight of oxygen, whilst that of the animals of Paris can only retain 10 per cent. to 12 per cent. One can thus understand how life at a certain altitude can rapidly cure anæmia.

“Mountain climates,” says Dr. Jaccoud, “have a twofold action—the one general, by which the restoration of the constitution is assured; the other local, by which the respiratory function is increased to its maximum, the lungs at the same time being preserved from inflammation. On the contrary, climates at a lower pressure (that is, in less elevated regions) have no curative action on tubercle; no preventive action on new tubercular growths. Their action is as follows: These climates during winter are fresh, temperate or warm, giving more or less even heat; consequently they exercise a favorable influence on any pre-existing pulmonary catarrh; they preserve, at least in a certain measure, from attacks of bronchitis;

and they allow the invalids to avoid in-door confinement, and to remain every day a few hours out of doors, without running the risk of catching cold, of bronchitis or pneumonia. That is the whole action of climates of average altitude. In fact, this is the situation: Climates where the pressure is low (high mountains) have a regenerative action directly acting on the constitution, and a salutary influence no less direct on the functional and circulatory action of the diseased organs. Thus these climates have a positive function in the operation of the treatment. They are active or modifying climates—in a word, they are *therapeutic agents*. Warm climates at an average pressure do not act directly on the functions of the respiratory organs; they possess little or no regenerative influence on nutrition and strength; they act indirectly, by protecting against intercurrent accident, by the maintenance of the *status quo*, and enable this benefit to combine with life out of doors. Consequently, these climates have no active part in the working of the treatment—they are passive or preserving climates; they are no agents; they are only *witnesses of therapeutic processes*.”

The observations of those eminent scientists which have been confirmed in every country in the civilized world, have contributed not a little in opening the eyes of the medical world to the efficacy of mountain air in the treatment of pulmonary diseases. In the winter of 1866-67, there were only 22 patients in Davos sanitarium, and 70 in 1869. In 1886, the number had increased to 6,830; in 1890, there were 10,167 inmates, while last year 10,239 registered on the books of the establishment.

QUALIFICATIONS THAT A MOUNTAIN SANITARIUM SHOULD POSSESS.

Having witnessed such good results abroad, it occurred to me that some locality in our own country could be found, where the pure air treatment might be operated, without going away from home to seek for it amongst peoples alien to us in language and customs. I at first looked about me for a convenient spot in the vicinity of Montreal. St. Hilaire, with its fine mountain and lake, seemed to combine all that was wanted for the purpose. The Iroquois House, too, with all its appointments and appurtenances, struck me as a sanitarium ready to hand. Then I bethought me of Memphramagog, its picturesque surroundings, and the beautiful Mountain of Orford heightening the charms of its scenery. But upon inquiry, I was reluctantly forced to turn away from these delightful resorts of the rich and healthful. The humidity of the atmosphere in both places was such as to destroy their usefulness for the objects of an all-the-year-round sanitarium. Finally, on the advice of my distinguished confrère, Dr. Roddick, and other eminent specialists, I took my way to the northern section of Terrebonne County, the Switzerland of America, in the heart of the Laurentides, where any needed elevation is attainable. I looked up a spot where the climate in summer would be fresh and breezy, and in winter, sheltered from the war of the elements. I recalled that the late lamented curé of St. Jerome, Father Labelle, had fixed upon Trembling Mountain as the place where he intended to end

his days when he retired from the turmoils of public life. The reverend gentleman, who was thoroughly acquainted with the topography of this region, used to say that at Trembling Mountain, the sky was seldom clouded and that the sun in winter, though strong, failed to melt the snow or affect the temperature of this Laurentian table-land. From the beginning of winter until spring sets in, this spot, protected as it is from the general violence of tempestuous weather, breathes an atmosphere of security and peace. I am convinced that there would be little risk in exposing one's self, on the sunny, southern slopes of Trembling Mountain, from early dawn till dark, with very little covering. This favorable condition of the atmosphere hereabouts, in the winter season, is due : firstly, to its height above the level of the sea ; secondly, to the depth and impacted condition of the snow, which absorbs the heat of the sun and keeps the air uniformly cold ; and thirdly, to the sheltered position of the mountain, so inviting to the sun's rays direct and indirect.

My experience of sanatoria in the old world taught me that the judicious selection of the site, was of paramount importance.

The first thing to be sought for was altitude. This seems to be the most important factor in assuring immunity from phthisis, as much by the special effort it imposes on the lungs, as I have already shown, as by the purity and dryness of the atmosphere at certain heights. "The purity of the air," says Dujardin Beaumetz, "plays a considerable part in the production and propagation of maladies." Since Pasteur

has shown by his celebrated experiments that spontaneous generation does not exist, and that wherever an organism is developed, the organic germs of the air are the factors of that generation, this importance, attached to the purity of the air, has become greater still.

"Mountain air," writes Dr. Morin, "especially when the ground is enveloped in snow, is remarkably pure, and microbes are extremely rare."

On the top of Mont Blanc, there is scarcely one microbe in a cubic yard of air; on the summit of the Eiger, at the height of 12,000 feet, there is not a single one; while in the valleys below, they swarm in millions.

Another essential factor that makes for healthfulness, is the dryness of the atmosphere in mountain ranges; this dryness is more sensibly felt when the sun strikes on a snow-bound surface. On the other hand, humidity vitiates the air for breathing, and assists in developing the microbe. The drier the air we breathe, the wholesomer it is for the lungs, says Dr. Morin.

Besides these two primary atmospheric conditions so destructive of bacilli, plenty of bright sun is needed. "Sunlight is one of the most active agencies in destroying disease germs. Wherever the sun's rays rest steadily, *there*, will the dead carcasses of germs be found, and the air, in consequence, sweeter and "purer." Thus writes Germain Say. But as far as human beings are concerned, this same sunlight is an undeniable tonic, and nowhere is it so pure as on the mountain top in the winter solstice.

Hence it follows that the site chosen for a sanitarium should be such as would command all the sunshine possible, and be sheltered from the wind. In selecting a location to build an abode for invalids, suitable for winter and summer, I never lost sight of these essential requisites. Although many mountains of the Laurentian chain seemed propitious for the object I had in view, few of them possessed all the required conditions. Finally, as stated before, my choice fell upon Trembling Mountain. It is the highest of the Laurentian range, having an elevation of 4000 feet above the level of the St. Lawrence River, and is well supplied with running water. Nestling at its base, lies Trembling Lake.

Trembling Mountain is a formation of colossal rocks covered over with earth, which nourishes an abundant growth of vigorous trees, fir, cedar, pine, tamarac, and other balsamic species. It is distant about four miles from the railway station of St. Jovite.

The climate of this village is well-known to be dry and salubrious. The hotels are ever crowded during summer. From a physician I obtained full information on the sanitary conditions of this village. He said that the health of the natives was excellent; that there were few constitutional diseases; that pulmonary phthisis is unknown amongst the inhabitants. Immunity from phthisis is indeed the special characteristic of the place. Nor is St. Jovite void of resources. It is a prosperous village, containing about a hundred families; the houses are large, some of them elegant, arranged in one main street crossed by a few others at right angles. If St. Jovite possesses im-

munity from phthisis, that immunity will be all the more certainly found higher up ; so that a beautiful plateau, situated on the side of the Trembling Mountain has been chosen for the site of the Sanitarium.

It is a well known fact in climatology that elevated plains have a great advantage over valleys of equal altitude ; when they face the east and south the sun appears earlier ; the feeling of air and space is more bracing, and yet the evening and nights are less cool, for the cold air that comes down from the mountain at sunset descending to the valleys and chilling them, does not remain on these high table-lands, especially if they have a suitable incline. This is the case with the table-land I have chosen, which slopes from N. W. to S. E.

The side of the mountain, where the Sanitarium is to be built is covered with century-old firs. Now fir trees with their evergreen foliage, extending almost to the ground, constitute one of the best shelters from the wind at all seasons.

From this high table-land, scenes rivalling those of Switzerland for grandeur and picturesqueness, charm the eye—the same wealthy lakes, towering mountains, running streams, shooting waterfalls and woodland witchery, challenges the admiration of all.

Here, are seen stretches of emerald green, relieved by shady grooves ; there, climbing rocks, wild and jagged ; elsewhere, beetling cliffs, bold and prominent, their every line, curve and angle sharply cut and well-defined. Near by, the expansive waters of Trembling Lake, clear and limpid, lave the feet of its cloud-capped namesake, Trembling Mountain. This

lake, which is nine miles long, by one and a half wide, is the paradise of anglers, the catch of fish being inexhaustible.

It has several tributaries, one of them on the highest elevation of the mountain, finds an outlet for its overflowing waters in a series of tumbling cascades, most delightful and refreshing to behold. Trembling Lake, in turn, empties its superfluous waters, by means of a ground waterfall, 25 feet in height, into the "Hidden River"—a pretty stream that appears and disappears from sight in the thick foliage of the trees,—hence its name. Here also the finny tribe disport themselves in large numbers. Truly, he must be fastidious who finds fault with this Vallambrossa of Canada's fairest region. The scenery is gorgeous in the ever-changing tints, now glowing, now subdued, of the mountains around, that seem like Alps on Alps to rise—now towering in the foreground, now fading into distance; anon bathed in light, then in shadow, according as the day is old or young, as the cloudlets come or go. Game of all sorts abounds in the surrounding forests.

The Quebec Government, fully appreciating the magnificence of the panorama that the Laurentides here unfold to the admiring gaze of the tourist, has decided to help the good work of founding a Sanitarium in this charming spot, and to provide an endless feast for the lovers of beautiful landscape. With this object in view, the Government has set apart sufficient of the Crown Lands to make a national park in this part of the province. The park, which is called "The Trembling Mountain Park," covers 14,750 acres

of land with lakes enclosed ; within these boundaries is found the mountain upon which the Sanitarium is to be constructed. The Government has also been good enough to regard my undertaking as a great public boon, and has graciously granted, in consequence, to the corporate body of the Sanitarium and its inmates, the freedom of this princely domain.

The style of the Sanitarium will be no discredit to the natural beauties of the surroundings. It will be ornamental. The main building will be flanked by Swiss cottages, thoroughly ventilated, each patient to have his own bedroom. In the interior only hard wood will be used, as being more readily and effectively disinfected. The principal structure will contain the dining room, lofty and airy, sitting room, reading room, billiard room, bath rooms, shower baths, etc.

A pavilion, partially open, will be erected for patients undergoing air cure. There will also be provided for this cure kiosks of wood, placed at certain distances along the promenades, wherein those who may desire, can find rest and shelter. They will be as bright and sunny as possible, with openings to the south, and floors raised high enough to secure exemption from the moisture of the ground.

Excellent drinking water will be supplied in abundance from a spring on the mountain top. In a word everything shall be done to perfect arrangements for the treatment of phthisis on the best principle of hygiene—a treatment that commands, more than any other, the confidence of the most eminent men of science ; a treatment that Sir H. Bennett has upheld

for years, having successfully undergone it himself; that has been a success in the sanatoria of Germany, in the sanitarium of Canigon in France, of Davos in Switzerland, of Sarenac in the United States of America and elsewhere, and that Professor Bouchard, of the Faculty of Paris, strongly recommends to his pupils.

FACILITIES FOR REACHING THE SANITARIUM.

From the foregoing it will at once be seen that this establishment will be furnished with the best means, known to modern science, for the promotion of air cure at all seasons of the year. It will be easily accessible, the distance between it and Montreal (84 miles) being accomplished in three hours by the C. P. R. This powerful corporation is ever ready to practically aid any enterprise aiming at the development of the country. Hence, recognizing the great benefit to the public of the sanitarium as projected, the Company was not slow in giving me every encouragement to proceed with the good work. Its distinguished Vice-President, Mr. Shaughnessy, assured me himself that his road would help the sanitarium in every way, and would provide every accommodation, in all seasons of the year, to rich and poor alike, who wished to reach it by their line. St. Jovite is four miles from the sanitarium, and the road connecting them shall be spacious and well made. Later on, the water power, caused by the overflow of the lake, may be utilized for electric cars. Amusements to distract the mind and pass the time will not be wanting. In summer, nature's charms will suffice to many, the woods and forests will offer their attractions, while picnics, ex-

cursions and other kindred enjoyments will amply serve to fill out the round of every-day life in a manner to satisfy the tastes of all. In addition to these amusements, there will be fishing, fowling, bathing and canoeing.

Winter will also have its pleasant pastimes. The long evenings will be enlivened and beguiled by parlor games alternating with song and music. The more vigorous will enjoy snowshoe tramps, toboggan slides, and the agreeable excitement and movement of skating. Fowling and fishing, a rare novelty at such a season, will to many be more attractive than they would be even in summer.

But at all seasons of the year, should any or all of these diverse amusements cease to entertain, there will remain still for old and young, the strong as well as the infirm, the beauty of nature, which in this—her fondest haunt—will henceforth be found “a joy forever.”

If in this paper I have laid particular stress upon the benefits accruing from air cure, in cases of tuberculosis, it is because such treatment is the most modern and has been the most strikingly effective in checking the march of this deadly disease. But the usefulness of the Trembling Mountain Sanitarium will not end here. The purity and dryness of its atmosphere will be found the best medicine for other maladies—for the dregs of pleurisy, asthma, chronic bronchitis, and kindred affections, in which cases they will bring about a complete cure or

great alleviation. Then there is *anæmia*; nothing succeeds better in this rebellious disease than staying in the mountains, especially in winter; the results of clinical surgery confirm the experiments of Viault and Regnard, which have shown that in the mountains the number of globules in the blood augments every day, and that the hæmoglobin produces more oxygen. Again, there are *constitutional debility and neurasthenia*, for which life in these heights and walks on foot will act as tonics to the nervous system, without exciting the brain, and will succeed when pharmaceutic medicaments have fallen through and hydrotherapy or thermal cures cannot be prescribed. There is, moreover, the *exophthalmic goitre* (Basedow's disease) for which the cold and altitude are a great resource; the *rebellious dyspepsia* in which mountain air brings back the appetite without requiring aperients or excitants. Lastly, there is the series of *convalescents*, of delicate people incapable of supporting a damp atmosphere, or long months spent mostly indoors in large towns. In all these cases, even a short stay on Trembling Mountain will strengthen the system by giving it increased vitality, its remedial operation being far more speedy than pharmaceutic medicaments or expensive trips undertaken to distant Southern climes.

In a word, all sufferers from ailments requiring hygienic treatment and pure bracing air, should make the Sanitarium their abiding place as long and uninterruptedly as possible. "A permanent residence," says Professor Jaccoud, in speaking of such establishments, "is absolutely necessary where air cure at

high elevations is sought. It is not a question of a mere winter or summer resort, but of the influence exercised by an elastic, rarefied medium, and of the general climatic properties and conditions inherent in such medium—it is a question only of a cure which may be slow, but which is certain.”



APPENDIX A.

COPY of a report of a Committee of the Honourable the Executive Council dated the twelfth of July, one thousand eight hundred and ninety-four; approved by the Lieutenant-Governor on the nineteenth of July, one thousand eight hundred and ninety-four.

No. 378.

Upon the granting of certain lots in the township of Grandison, for the establishment of a sanitarium.

The Honourable the Commissioner of Crown Lands, in a report dated the twelfth of July instant (1894), sets forth :

That, by his petition dated the twentieth of November last, Dr. Camille Laviolette, in view of creating and establishing a sanitarium, for specially treating pulmonary diseases, requested the Government to grant to him gratuitously certain lands covered by Trembling Mountain, and to concede to him, on the ordinary terms of payment and settlement, three hundred acres of land at the foot of the said mountain ;

That the founding and maintenance of an establishment of that nature, in the place in question, at a distance which is relatively near (about eighty-four miles by rail) to the city of Montreal, would be of service to the population of that great centre and to that of the neighbouring region, and also to the Province ;

That the reservation of a large extent of forest lands close to and surrounding on all sides the site of a hospital of the kind is one of the conditions necessary to the success of such an undertaking, while it would at the same time, permit of the realization of what has already been done in many of the neighbouring states and provinces, that is, the preservation of the forest, and the protection of the game which is in it and the fish which abound in the lakes and rivers with which it is watered ;

That it is clearly established by the report of A. B. Filion, Crown Lands' agent of the Petite Nation division, that the lands in question are almost all unfit for cultivation, very high and rocky, and contain scarcely any merchantable timber, and that it would be very advantageous for the purposes intended and be for public general utility, if the whole of the territory covered by the Trembling Mountain and its foot-hills were made a forest reserve ;

The Honourable the Commissioner recommends that the whole undivided part of the township of Grandison, comprising fourteen thousand seven hundred and fifty acres in extent, should be declared a special provincial forest reserve, under the name of the "Trembling Mountain Park," the whole to be subject to the sanction and confirmation of the Legislature, as there is no statutory provision authorizing such a reserve and providing for the expenses which will be incurred for its maintenance and preservation.

The Honourable the Commissioner further recommends that he be authorized :

1. To set aside four hundred acres of the lands forming the highest peak of the said Trembling Mountain, being the prolongation of lots fourteen, fifteen, sixteen and seventeen of the fourth range of the township of Grandison, which could be gratuitously ceded, wholly or in part, for the purposes of such sanitarium, if the Legislature should so authorize;

2. To sell, upon the usual conditions of settlement, lots twenty-three, twenty-four and twenty-five of the said fourth range of the same township, to the syndicate represented by Dr. Laviolette, so soon as it is regularly incorporated and furnishes sufficient sureties that a sanitarium as aforesaid would be founded and maintained.

Certified,

(Signed),

GUSTAVE GRENIER,
Clerk of the Executive Council.

An Act to establish the Trembling Mountain Park.

Sanctioned, January 12th, 1895.

WHEREAS the lands of Trembling Mountain, in the township of Grandison, are unfit for cultivation and rocky, with scarcely any merchantable timber thereon, and it would be advantageous to set them aside as a forest reserve;

Whereas the establishment of a sanitarium, in the vicinity of such forest reserve, for the treatment of pulmonary diseases would be in the interest of the people of the Province; and whereas an order in council was approved on the 19th July, 1894, whereby 14,750 acres of the unceded and unsubdivided lands of the township of Grandison were set aside for the said purposes, and the Commissioner of Crown Lands was authorized, upon certain conditions, to grant, for the purposes of the sanitarium, certain other portions of the said township of Grandison to certain persons so soon as they are incorporated for such purpose; and whereas it is expedient that the said order in council be confirmed;

Therefore, Her Majesty, by and with the advice and consent of the Legislature of Quebec, enacts as follows :

1. The order in council (appendix A of this act) of the 12th July, 1894, approved on the 19th July, 1894, is hereby confirmed, and 14,750 acres, being the whole of the undivided portion of the township of Grandison, is hereby set aside as a special forest reserve under the name of the :
" Trembling Mountain Park."

The Commissioner of Crown Lands, shall have control over the said reserve, and may appoint the officers necessary for the maintenance of the said reserve and for its preservation.

2. The Lieutenant-Governor in Council may make such rules and regulations as he may deem necessary for carrying out the provisions of this act.

3. The Commissioner of Crown Lands may make a free grant, for the purposes of a sanitarium, of four hundred acres of land on the summit of the said mountain to any persons or corporations who furnish sufficient sureties that they will erect and maintain such sanitarium, under such conditions as the Lieutenant-Governor in Council may be pleased to fix ; and may also sell, upon the ordinary conditions of settlement, lot 23, 24 and 25 of the fourth range of the said township, to the said persons or corporations.

4. This act shall not affect any rights acquired under any license to cut timber or any lease to any person or to any fish and game club.

5. This act shall come into force on the day of its sanction.